

self. The following telegram in the *New York Herald* of September 23, from New Bedford, Massachusetts, was the first announcement of the return of the expedition:—

"The Franklin Search Expedition, under the command of Lieut. Schwatka, have returned here. They have discovered and brought southward relics of the two British ships *Terror* and *Erebus*, which sailed from London, under Sir John Franklin, in May, 1845. The expedition successfully withstood the greatest amount of cold ever encountered by white men. During sixteen days of a sledge journey, extending over a period of eleven months, the average temperature was 100° below freezing point. In the summer and autumn of 1879 the expedition made a complete search of King William's Land and the adjoining mainland, travelling by the route pursued by the crews of the *Erebus* and *Terror* in retreating towards Back's River. They burnt [buried] the bones of all remaining above ground, and erected monuments in memory of the dead. Their researches have established the fact that the records of the Franklin Expedition are beyond recovery. They have also learnt that one of Sir John Franklin's ships drifted down the Victoria Straits, and was unwittingly scuttled by the Eskimo, who found it off Grant Point in 1849. The expedition have brought away the remains of Irving, the third officer of the *Terror*. From each spot where graves were found a few tokens were selected which may serve to identify those who perished there. They also secured a board which may be of use in identifying the ship which completed the North-West Passage."

A few further details have appeared in the subsequent numbers of the *Herald*, but we must await the arrival of the paper and the publication of Lieut. Schwatka's narrative for full details. Particulars, we are told, are given of the sufferings and hardships endured by Lieut. Schwatka's party, who, however, succeeded in discovering relics of the expedition, and learnt from the natives details of the sufferings it underwent from cold and starvation. The natives related that they saw a small party of officers, believed to be the last survivors of the expedition, black about the mouths and with no flesh on their bones, dragging a boat across the ice. They then disappeared from view, and their skeletons were subsequently found under the boat and in a tent, a prey to wild beasts, and affording evidence that some of them had been eaten by their comrades. Lieut. Schwatka's own party, we are told, made a sledge journey of over 2,819 geographical miles, mostly across unexplored country, and this constitutes the longest sledge journey on record, both as to time and distance; the men it seems lived like the natives.

The sad story of the terrible suffering endured by 105 men who quitted the *Erebus* and *Terror* on April 22, 1848, ten months after the death of Franklin, is too well known from the narrative of the search party in the *Fox* under M'Clintock. Ample evidence was found scattered along the shores of King William's Land and Boothia, by which they endeavoured to reach the Fish River Settlements, of the fate of most of the party, many of whom, the Eskimo told M'Clintock, fell down as they walked, and had to remain unburied. Lieut. Schwatka's party have done what they could to show respect to what remains of the brave and unfortunate band. Unfortunately no written records of the expedition have been found; there was little room to expect that there would. As to the statement about the vessel which completed the North-West Passage, we suppose this must mean that

one of the ships had drifted south-westwards so far as to meet with the furthest eastward point reached by Franklin in his earlier expeditions. The records of temperature will be eagerly looked for by meteorologists; the degree of cold seems to have far exceeded any Arctic temperature on record.

An unfortunate set-off to Lieut. Schwatka's successful return is the news that Capt. Howgate has been again compelled to put back in the *Gulnare* to St. John's, Newfoundland, the vessel being so unsuited for her work that the proposed expedition to Lady Franklin Bay has had to be abandoned for this year. Capt. Howgate is certainly very unfortunate in his Arctic scheme, though we trust he will not be daunted, but will next year be able to accomplish the foundation of his Polar colony.

Further sad news comes from San Francisco of the Gordon-Bennett expedition in the *Jeannette*, which set out full of hope not long ago. No tidings can be obtained by the whalers of the expedition, and the relief steamer *Corwin* had to return owing to the severity of the weather. There is however no more reason for giving up hope than there was in the case of the Payer-Weyprecht expedition, which disappeared suddenly off the Novaya Zemlya coast in 1872, and returned about two years later with the tidings of the discovery of a new Arctic land. This land, Franz Josef Land, a telegram from Hammerfest informs us, was visited in August by that most daring of yachtsmen, Mr. Leigh Smith. He explored to the west as far as 45° E. and $80^{\circ} 20'$ N., and sighted land from that point about forty miles north-west. No doubt Mr. Leigh Smith's experience this year and Capt. Markham's in the same direction last year, seem to point out that exploration northwards on the basis of Franz Josef Land is hopeful. So long as such exploration is carried on by private enterprise there can be no objection to it, but if Government has any funds to spare for Arctic work during the next few years, they would be expended to the best advantage in enabling this country to join the European and American concert for the establishment of Polar observing stations, from which England is conspicuously absent.

RODD'S BIRDS OF CORNWALL

The Birds of Cornwall and the Scilly Islands. By the late Edward Hearle Rodd. Edited, with an Introduction, Appendix, and brief Memoir of the Author, by James Edmund Harting. With Portrait and Map. (London: Trübner and Co., 1880.)

THE addition of another volume to the already long series of works upon the local avifaunas of Great Britain is not perhaps an event of any very great importance as regards ornithology in general. Yet the name of the late Mr. Edward Hearle Rodd of Penzance is so well known to British naturalists, and the county in which his observations were made is a land of such special interest, that there can be no doubt of the present volume being acceptable to a wide circle of readers.

At the time of his death it was generally understood that Mr. Rodd had in preparation a general work upon the birds of his native county. This work, however, as we are now informed by Mr. Harting, had only so far advanced as to "consist of a transcript of various notes on the ornithology of Cornwall, communicated by the author to the pages of the *Zoologist* arranged in chrono-

logical sequence." "It was obvious," Mr. Harting remarks, "that in order to render these notes of practical utility it was necessary to re-cast and re-write the whole." This has been ably executed by the editor, and we have now Mr. Rodd's interesting and original observations, which were continued over a period of nearly forty years, reduced into method and order. These observations, thus re-arranged, occupy the first portion of the present volume, and constitute the most important part of it. Appended to it are more or less contracted reprints of the "yearly reports" which Mr. Rodd was for many years accustomed to contribute to the *Journal* of the Royal Institution of Cornwall, containing an account of the principal ornithological rarities which had come under his notice in each year, and of the additions thus made to the list of the Cornish avifauna. The editor has also considerably increased the value of the volume, especially to Cornish naturalists, by his Introduction. In this is given an account of the previously existing literature on Cornish ornithology, beginning in 1478 with the *Itinerary* of William of Worcester and continued down to the present period, and constituting a most useful summary of information on the subject. Mr. Harting has likewise appended a list of Cornish and provincial names, which will further increase the interest of his work.

The extreme southern and western situation of Cornwall renders it one of the first resting-places in spring and one of the last in autumn of those birds which visit us during the summer migration, whilst several well-known Continental species, which are scarcely ever found in the more eastern parts of Great Britain, occur more or less regularly in this remote county. The black redstart, for example, so little known to the majority of English observers, except in its native haunts in Rhineland and Switzerland, is "not uncommon" in Cornwall in the winter months, though usually met with in immature dress. An adult male, however, in very beautiful plumage was captured in December, 1856, in the immediate neighbourhood of Penzance. Another much less-known European passerine bird, which has been met with in no other part of the United Kingdom, straggles occasionally into Cornwall—curiously enough, as it is essentially an eastern species, and might be rather expected to occur on the coasts of Norfolk and Suffolk. This is the little red-breasted flycatcher (*Muscicapa parva* of Bechstein), of which a single example in immature plumage was obtained near Falmouth in 1863. Two other specimens of the same species were subsequently captured in the Scilly Islands. Eastern Europe, as we have already observed, is the true home of this little bird, which will be well known to such of our readers as have visited Constantinople, where it is very common in autumn among the old walls and ruins.

Another very interesting visitant to the coasts of Devon and Cornwall is the Greater Shearwater (*Puffinus major* of Faber). This species is also well known on the Scilly Islands, where it goes by the singular name of "Hack-bolt." Its congener, the Manx Shearwater (*Puffinus anglorum*), is still more common on the Cornish coast, and breeds in some of the Scilly Islands. But for details on these and other peculiarly western birds we must refer our readers to Mr. Rodd's volume, which no student of the British Ornis should fail to add to his library.

DEEP-SEA SOUNDING AND DREDGING

United States Coast and Geodetic Survey, Carlile P. Patterson, Superintendent. A Description and Discussion of the Methods and Appliances used on Board the U.S. Coast and Geodetic Survey Steamer "Blake." By Charles D. Sigsbee, Lieut.-Commander, U.S.N. Pp. 192, xli. Plates. (Washington: Government Printing Office, 1880.)

THE publication of the "Depths of the Sea" and of the "Voyage of the *Challenger*" by Sir Wyville Thomson has made the public familiar with the work of the English in the exploration of the depths of the ocean. But little is known, even in America, of the important part which the United States Coast Survey has taken in the solution of the problems of the physical geography of the sea. The Coast Survey during the superintendence of Prof. Bache instituted a series of investigations on the physical problems of the deep sea, connected with the Gulf Stream, which have little by little been expanded by his successors, Prof. B. Peirce and the Hon. Carlile P. Patterson, into the most important hydrographic exploration yet undertaken by any government. With a wise liberality secondary hydrographic scientific problems, mainly of interest to the biologist and geologist, have been made a part of the work of the Coast Survey. Thus since 1866 the use of the dredge, the trawl, the tangles, and of all the apparatus necessary for a thorough exploration of the fauna of the depths of the sea has become as familiar to some of the navy officers attached to the Coast Survey as the use of the sextant or of the lead.

The Coast Survey steamers, *Bibb*, *Hassler*, and the *Blake*, have acquired a special reputation as deep-sea dredgers. The work of the *Bibb* and *Hassler* is known to naturalists mainly from the memoirs of Pourtales. Of the results of the *Blake* only a part has as yet been published under the direction of Mr. Alexander Agassiz.

Not only all naturalists but also hydrographers must be interested in the volume just published respecting the equipment of the *Blake*, a small steamer of only 350 tons burthen, which, under the skilful commands of Lieut.-Commander C. D. Sigsbee and Commander J. R. Bartlett, has not only done more rapid but also far more accurate work than has been accomplished with the old methods and appliances of the large men-of-war usually detailed for similar work by European governments.

Lieut.-Commander Sigsbee gives in this Report full descriptions of the thermometers, the water-cups, the salinometers, and of the methods of observing the currents in use on the *Blake*. The most important part of the Report is that devoted to deep-sea sounding. The sounding-machine, called a modification of Sir William Thomson's machine for sounding with wire, is known on the *Blake* as the "Sigsbee machine," and Sir William Thomson would find it difficult to recognise in the sounding machine of the *Blake* the apparatus he first suggested for sounding with piano wire. Throughout the Report the results of Lieut.-Commander Sigsbee's inventive genius are evident, from the water-cup to the shot detach, the dredges, the trawls, the reels, the accumulator, there is nothing which he has not rendered more useful. His enthusiasm was shared by his officers, and their names